National Weather Service
Convective Watch Decentralization
Service Evaluation Plan
November 12, 1997

1. Purpose

An evaluation of the Convective Watch Decentralization (CWD) process is necessary to provide National Weather Service (NWS) management with information to make knowledgeable decisions. Feedback from NWS employees and external customers will be used to determine whether the products and methods chosen to decentralize the convective watch program are useful to customers, improve service to the public and do not overburden staff or otherwise negatively impact field office operations. This plan details the philosophy that will be used to run the evaluation, assigns responsibilities for all NWS elements involved in the evaluation, defines the methods to be used, and outlines schedules and reporting procedures.

This plan is to be used in conjunction with the Convective Watch Decentralization Plan published by the Office of Meteorology, National Weather Service Headquarters.

2. Objectives

The success or failure of the Convective Watch Decentralization program is defined by the following criteria:

- The quality of the convective watch products.
- The ability of the (NWS) to provide timely convective watch products to customers (internal and external).
- The ability of customers to understand and use convective watch products.

Through each phase, a service evaluation will be performed to:

- Work with the Product Format Team of the CWD Plan to identify any changes, if needed, in product format.
- Determine the impact on workload and staffing at NWS field offices.
- Determine the impact on quality and timeliness of other NWS products.
- Determine effectiveness of interoffice coordination (NCEPs-WFO, WFO-WFO)
- Determine utility of products for other NWS offices (NCEPs, CWSU).
- Determine customer satisfaction with watch products (e.g. clarity, timeliness, content, etc.).
- Ensure feedback from NWS field offices, external customers, and other NWS offices (CWSUs, NCEPs) is incorporated into the evaluation process.

3. Methodology

The use of teams in previous evaluation efforts has proven to be effective and will therefore be used to evaluate the Convective Watch Decentralization process. A National Evaluation Team will consist of one representative from a field office in each of the CONUS regions, two representatives from NWS Headquarters, and one member each from the Storm Prediction Center (SPC) and National Weather Service Employees Organization (NWSEO). Attachment 1 lists these team members. Local offices selected for in-depth evaluation should also use team(s) within their office for their part of the evaluation.

It is not feasible to do an in depth evaluation at all offices. Each of the CONUS regions will select not less than three and not more than seven offices for in-depth evaluation (in-depth

evaluation offices will be referred to as L1). Regions will have the option to change offices performing in-depth evaluation after each phase is completed. An evaluation with less detail will take place at all other locations (offices with less detailed evaluation will be referred to as L2). Selection of the L1 offices will occur no later than two months prior to the start of each Phase. Selection criteria should include:

- Geographic variability
- Variety of programs
- Staffing level
- Climatological variability
- Mix of NWSFOs and NWSOs
- Proximity to a CWSU

At each L1 office, team(s) will be formed to evaluate the CWD process in their County Warning Area (CWA). The evaluation will be divided into two parts: 1) An internal evaluation will be performed to determine the impact of CWD on local office operations; 2) An external evaluation will be performed to determine customer satisfaction during each phase of the plan.

The change in convective watch products will also affect National customers of NWS products. The CWD Service Evaluation Team will work with the Customer Participation Panel and National Weather Services Headquarters to evaluate a sample of national customers.

Planning and execution of the service evaluation will be in cooperation with the NWSEO. As mentioned above, a union representative will be a full working member of the national evaluation team. Local office managers are expected to work with union stewards under the Quality Through Partnership (QTP) Agreement.

4. Responsibility

The CWD plan is divided into four phases. Evaluation of the CWD process will occur during testing of each phase and for the first four months following the start of each phase. This section describes the evaluation responsibilities of the various NWS units involved in the CWD process.

4.1 Weather Service Headquarters

The National Convective Watch Decentralization Service Evaluation Team has overall responsibility for selecting national customers (e.g. The Weather Channel) of convective watch products for inclusion in the evaluation process. It should work closely with the regions, the SPC, and the Customer Participation Panel to ensure an adequate sample of customers is included in the evaluation.

The CWD Service Evaluation Team is responsible for soliciting input from those national customers selected for evaluation of the CWD process. The Customer Participation Panel should be used as a resource for help in solicitation, collection, and collation of data.

Responsibilities include:

1. Select national customers for CWD evaluation.

2. Administer questionnaire to the national customers (Attachment 3).
   a. After any day when a field test occurs.
   b. Each week for the first four months following the beginning of each phase.
   c. Evaluation reports are required only when watch products are produced.
3. Act as liaison for special requests by the National Evaluation Team.

4.2 Weather Service Regions

Each CONUS region is responsible for selecting an appropriate sample of L1 offices. The Meteorological Services Division (MSD) within each region will select the L1 stations. Selection criteria is defined in section 3. Offices selected for L1 evaluation should be spaced such that two or three L1 offices will be in a typical convective watch box.

All CONUS regions should monitor the CWD process for any adverse outcome. Each region should work closely with their regional representative of the National Evaluation Team in evaluating the CWD process. The regions are encouraged to provide input to the National Evaluation Team on any items they deem essential to the successful implementation of the CWD process.

4.3 NWSFO/NWSO

4.3.1 Offices with in-depth evaluation responsibility (L1)

L1 office evaluations will be conducted using questionnaires and interviews. A representative sample of external customers should be selected for participation in the evaluation. External customers selected can include local radio stations, TV stations, emergency managers, FAA Flight Service Stations, CWSUs, or any other customer of convective watch products in the L1 CWA. In addition to questionnaires, interviews are also encouraged. Interviews should be conducted with customers and with office staff involved in issuing watch products. These interviews should be conducted as soon as possible following a test or issuance of real convective watch products.

Local L1 team(s) have the following responsibilities:

1. Ensure internal questionnaires are completed (Attachment 2) .
2. Record any unusual events related to the CWD process and relay those events to their regional representative of the National Evaluation Team and to their regional MSD via email.
3. Administer questionnaires to external customers in their CWA (Attachment 3).
4. Administer questionnaire to CWSU (if CWSU in CWA) (Attachment 4).
5. Act as liaison for special requests by the National Evaluation Team.
6. One office questionnaire (Attachment 2) with a consensus evaluation will be filled out:
   a. After any day the office is involved in a field test (pre-phase).
   b. Each week for the first four months following the beginning of each phase if watch products were issued by the office.
7. Forward questionnaires and results of interviews, to their regional representative of the National Evaluation Team no later than:
   a. Three days following a pre-phase field test.

b. One week following a week when real watches are issued (Phase operations).

8. Questionnaires will be transmitted to the regional representative via electronic mail (CC:Mail). The electronic form of the questionnaire(s) will be provided by the national team.

4.3.2 Offices with less detailed evaluation responsibility (L2)

These offices are not required to submit formal evaluations like the L1 offices. These offices are encouraged to monitor the testing and operations phase of the CWD process and submit their comments (positive or negative) to the appropriate regional representative of the National Evaluation Team as soon as possible. Similar to L1 offices, these offices are encouraged to use teams in the evaluation process. L2 offices should use the questionnaires in Attachments 2-4 as guidance in their evaluation process. Comments will be forwarded by electronic mail (CC:Mail) to the regional representative of the National Evaluation Team.

4.4 National Centers for Environmental Prediction (NCEP)

4.4.1 Storm Prediction Center

An in-depth evaluation will be conducted using questionnaires and interviews. Since the SPC is responsible for monitoring convective development across the nation, it is not feasible for them to evaluate every watch issuance or even every day when watches are issued. The SPC should make every effort to evaluate an appropriate sample of watch products. It is the responsibility of the local team(s) at the SPC to:

1. Ensure office questionnaire is completed (Attachment 5) .
2. Record any unusual events related to the CWD process and relay those events to the SPC and NWS Headquarters members of the National Evaluation Team via email.
3. Ensure input from other National Centers is incorporated (AWC, HPC, TPC, etc.).
4. Act as liaison for special requests by the National Evaluation Team.
5. During a pre-phase field test day, one questionnaire with a consensus evaluation will be filled out. Forward the questionnaire to the SPC representative of the National Evaluation Team no later than three days following the day of a field test.
6. During Phase operations, a representative evaluation of watch events should be performed. Of those watch events selected for evaluation, one questionnaire with a consensus evaluation will be filled out per shift. Forward the completed questionnaires to the SPC representative of the National Evaluation Team on a weekly basis.
7. Questionnaires will be transmitted via electronic mail (CC:Mail). The electronic form of the questionnaire(s) will be provided by the national team.

4.4.2 Other National Centers

Other entities within NCEP (AWC, HPC, TPC, etc.) are encouraged to form teams and provide input on the CWD process to the SPC local evaluation team.

4.5 National Convective Watch Decentralization Evaluation Team

- Team responsibilities include:

1. Ensure local offices and national centers understand evaluation requirements.
2. Provide questionnaires used in the evaluation process.
3. Assist in the evaluation of national customers.
4. Collect and collate evaluation data.
5. Analyze evaluation data.
6. Provide input to, and critique, evaluation reports.
7. Ensure schedules are adhered to.

- Team Leader responsibilities include:

1. Distribute list of L1 stations to all regional MSDs and WCMs.
2. Collect and collate data from regional representatives.
3. Write evaluation reports as required by the Convective Watch Decentralization Plan.

- Regional Team Member responsibilities include:

1. Act as liaison to participants (L1, L2, MSD) in their respective regions.
2. Collect and collate information from their respective regional offices.
3. Forward regional evaluation data to the team leader within one week of receipt.
4. Ensure a representative cross section of external customers take part in the evaluation at L1 offices.

- SPC representative responsibilities include:

1. Act as liaison to the NCEP.
2. Collect and collate information from the National Centers.
3. Forward NCEP evaluation data to the team leader within one week of receipt.
4. Work with WSH representatives to ensure a representative sample of national customers are evaluated.

- NWSEO representative responsibilities include:

1. Provide assistance, as needed, to L1 offices to ensure they operate under the QTP agreement.
2. Assist regional and SPC members as needed.

- WSH representative responsibilities include:

1. Assist regional and SPC members as needed.
2. Act as liaison to WSH administration.
3. Ensure a representative sample of national customers are evaluated.
4. Collect and collate evaluation information from national customers.
5. Forward national customer evaluation data to the team leader within one week of receipt.

5. Schedule

Milestones described in this section of the evaluation plan are directly tied to events listed in the

Convective Watch Decentralization Plan.

5.1 Weather Service Headquarters

- Work with the the CWD Service Evaluation Team and the Customer Participation Panel to select a representative sample of national customers to be included in the CWD evaluation process. Selection of national customers for evaluation will occur no later than one month prior to each pre-phase test or the start of each phase.
- Full evaluation responsibilities of national customers will last the duration of a field test and four months after the start of a phase.

5.2 Weather Service regions

- Notify NWSFO/NWSOs selected as an L1 office two months prior to each pre-phase test or the start of each phase.
- Provide a list of NWSFO/NWSOs selected as L1 offices to the National Evaluation Team leader and their regional representative on the National Evaluation Team six weeks prior to each field test or start of each phase.

5.3 Local Evaluation Teams

- Full evaluation responsibilities as described in Section 4 will last for the duration of a field test and four months after the start of each phase.

5.4 National Convective Watch Decentralization Evaluation Team

- Regional representatives will contact field sites selected for in-depth evaluation one month prior to each test or the start of each phase to:
    a. Ensure local offices understand evaluation requirements.
    b. Ensure a representative cross section of external customers take part in the evaluation at in-depth sites.
- Submit a field test evaluation report to Office of Meteorology (OM) one month after the close of a field test.
- Submit a Phase evaluation report to OM six months after the start of each Phase.
- Questions for Attachments 2-5 may change for each Phase. The questionnaires for each Phase will be made available to appropriate NWSFO/NWSOs, NWSH, and SPC one month prior to each field test or the start of each Phase.

Attachment 1 - Convective Watch Decentralization Service Evaluation Team Members

Team Leader - Paul Flatt, NWSO Tucson, Arizona
Coordinator - Bill Lerner, NWSH OM Silver Spring, Maryland

Eastern Region	Stanley Levine National Weather Service 587 Aero Dr Cheektowaga, NY 14225-1405	(716) 565-0015 (716) 565-9002 FAX
Southern Region	Brian Peters National Weather Service 465 Weathervane Rd Alabaster, AL 35007-5079	(205) 664-7829 (205) 664-7821 FAX
Central Region	Jim Hatten National Weather Service 1301 Airport Parkway Cheyenne, WY 82001-1549	(307) 772-2468 (307) 772-2099 FAX
Western Region	Paul Flatt National Weather Service 520 N. Park Ave. Suite 304 Tucson, AZ 85719-5035	(520) 670-5156 x223 (520) 670-5167 FAX
Storm Prediction Center	Bob Johns National Weather Service 1313 Halley Circle Norman, OK 73069	(405) 579-0705 (405) 366-0472 FAX
NWSEO	John Hales 1313 Halley circle Norman, OK 73069	(405) 579-0707
Weather Service Headquarters	Bill Lerner W/OM11, Room 14110 National Weather Service SSMC 2 1325 East-West Highway Silver Spring, MD 20910-3283	(301) 713-0090 x133 (301) 713-1598 FAX
	Martha Yacoub (Working for WSH from San Diego) National Weather Service Office 11440 West Bernardo Court, Suite 230 San Diego, CA 92127-1643	(619) 675-8700 x235

Attachment 2 - NWSO/NWSFO Questionnaire

Date: _____

When filling out this questionnaire, feel free to expand on any answer as you feel the need to do so. This questionnaire is not meant to constrain you in any way. At a minimum, please fill out the questions below. If you think additional comments are needed to fully explain your position, please add those comments. You should also feel free to comment on any aspect of the CWD process in your answer to question 16.

1. What type of office is this?
   NWSFO NWSO

2. How many Meteorologists, Meteorologist Interns, and HMTs are in your office?

   _____ Mets _____ Met Interns _____HMTs

3. How many staff members make up your "typical" severe weather staffing, and what are the job categories of those individuals?

Number	Job Category	Number	Job Category
_____	HMT	_____	Meteorologist
_____	Meteorologist Intern	_____	Hydrologist
_____	Other (specify job category)		

4. Is this different than a year ago?
   (1 = less, 3 = same, 5 = More)

   1 2 3 4 5

5. Has your office undergone Team training? (Team training as part of AWIPS installation.)

   Yes No

6. Did your office previously have watch redefining responsibility for your state?

   Yes No

7. How has the increased watch responsibility (issuing watches and clearing counties) impacted office operations?
(1 = Little impact, 5 = Great impact)

1 2 3 4 5

Comments: _____

_____

_____

8. Is additional staffing needed to handle any aspect of issuing watches or clearing counties from watches during active warning situations?

Yes No

9. How is the **watch redefining** software (zip or other) working?
(1 = Not user friendly, 5 = User friendly)

1 2 3 4 5

"Bugs" or "glitches" encountered: _____

_____

_____

_____

Positive aspects of software: _____

_____

_____

_____

10. How is the **county clearing** software working?
(1 = Not user friendly, 5 = User friendly)

1 2 3 4 5

"Bugs" or "glitches" encountered: _____

_____

_____

_____

Positive aspects of software: _____

_____

_____

_____

11. Compared to one year ago, how is communications/coordination with SPC?
(1= Harder and/or more often, 3 = No change, 5 = Easier and/or less often)

1 2 3 4 5

Explanation if needed: _____

_____

_____

12. Compared to one year ago, how is communications/coordination with adjacent offices?
(1= Harder and/or more often, 3 = No change, 5 = Easier and/or less often)

1 2 3 4 5

13. Compared to one year ago, how are customer inquiries regarding watches in effect and/or counties remaining in a watch?
(1 = Less, 5 = Many)

1 2 3 4 5

Explanation if needed: _____

_____

_____

14. Have your customers been able to adapt to the issuance of watches at the local level?
(1 = Much confusion, 3 = No change from before, 5 = Easier than before)

1 2 3 4 5

15. Have your customers found the increased number of products useful?
(1 = Not useful, 5 = Very useful)

1 2 3 4 5

Specific Customer Comments: _____

_____

_____

_____

16. Have your customers found the product detail useful?
(1 = Not useful, 5 = Very useful)

1 2 3 4 5

17. Please add any comments you feel are important to the Convective Watch Decentralization process (use additional sheets if necessary).

Attachment 3 - External Customer Questionnaire

Name: _____

Affiliation: _____

Date: _____

Questions 2, 3, 7, 8, and 9 (those with multiple choice answers, 1 to 5) should be rated compared to real watches/watch products using the following scale:

1 = much worse
2 = worse
3 = same
4 = better
5 = much better

1. How do you receive watch products (circle all that apply):

   a. wire service

   b. NOAA Weather Wire Service

   c. private meteorological service (which?) _____

   d. TV/radio (which?) _____

   e. NOAA Weather Radio

   f. other (which?) _____

2. Do you use the Preliminary Notification of a Watch (SAW)? Yes No
   If yes, how would you rate...

   a. the timeliness of receipt?

      1 2 3 4 5

   b. the ease of finding the information you needed?

      1 2 3 4 5

   c. the ease of understanding the information you needed?

      1 2 3 4 5

   d. the completeness of the information you needed?

      1 2 3 4 5

3. For the Public Watch Narrative (SEL), how would you rate

   a. the timeliness of receipt?

   1 2 3 4 5

   b. the ease of finding the information you needed?

   1 2 3 4 5

   c. the ease of understanding the information you needed?

   1 2 3 4 5

   d. the completeness of the information you needed?

   1 2 3 4 5

4. If the Public Watch Narrative (SEL) format needs improvement, what information do you need

   a. at beginning of the product? _____

   _____

   _____

   b. in the middle of the product? _____

   _____

   _____

   c. at the end of the product? _____

   _____

   _____

5. If the Public Watch Narrative (SEL) format needs improvement, should the information be in

   a. narrative form (sentences and paragraphs)?

   b. bullets (short, incomplete sentences)

   c. other (what?)

6. In addition to questions 4 and 5 above, are there other improvements you can recommend regarding the format of the Public Watch Narrative (SEL)?

_____

_____

7. The shape of the watch box has changed from a 4-sided parallelogram to a multi-sided polygon. If you use the entire watch box, how would you rate this change?.

   1 2 3 4 5 Not Applicable

8. For severe weather statements (SVS), how would you rate

   a. the timeliness of receipt?

   1 2 3 4 5

   b. the ease of finding the information you needed?

   1 2 3 4 5

   c. the ease of understanding the information you needed?

   1 2 3 4 5

   d. the completeness of the information you needed?

   1 2 3 4 5

   e. the frequency of issuance?

   1 2 3 4 5

9. For the Watch Clearance Notification (WCN), how would you rate

   a. the timeliness of receipt?

      1 2 3 4 5

   b. the ease of finding the information you needed?

      1 2 3 4 5

   c. the ease of understanding the information you needed?

      1 2 3 4 5

   d. the completeness of the information you needed?

      1 2 3 4 5

10. How do you rate receiving multiple redefining statements from more than one NWS office in a state for a single watch?
    (1 = Very confusing, 3 = No change, 5 = Much better)

    1 2 3 4 5

11. Does the Watch Outline Update (WOU) product provide the functionality of the individual state level Convective County Listing (SLS) products?
    (1 = Does not meet need, 3 = No change, 5 = Much better)

    1 2 3 4 5

12. How do you rate the update frequency of the WOU product?
    (1 = Too slow, 3 = Just right, 5 = Too frequent)

    1 2 3 4 5

13. Please add any comments you feel are important to the Convective Watch Decentralization process (use additional sheets if necessary).

Attachment 4 - CWSU Questionnaire

Station Identifier: _____

Date: _____

1. Are public and aviation Convective Watch products that you use consistent with each other?
   (1 = Very inconsistent, 5 = Very consistent)

   1 2 3 4 5

2. Are Storm Prediction Center products and NWSFO/NWSO products consistent?
   (1 = Very inconsistent, 5 = Very consistent)

   1 2 3 4 5

3. How do the new Convective Watch products compare with older watch products?
   (1 = Worse than before, 3 = same as before, 5 = Better than before)

   1 2 3 4 5

4. Rate the Convective Watch parallelogram compared to the new Convective Watch polygon.
   (1 = Worse, 3 = Same, 5 = Better)

   1 2 3 4 5

5. How much time did it take to plot and issue a watch on the MWP compared to the old system?
   (1 = Longer than before, 3 = Same as before, 5 = Quicker than before)

   1 2 3 4 5

6. Does the new Convective Watch process affect timeliness of your briefings to FAA personnel?
   (1 = Takes longer, 3 = No change, 5 = Quicker)

   1 2 3 4 5

7. How do new Convective Watch products affect Severe Weather Avoidance Plan operations?
   (1 = Worse than before, 3 = No change, 5 = Better than before)

   1 2 3 4 5

8. Do you use WCN products issued by NWSFO/NWSOs?

   Yes No

   If Yes, is the format of the WCN an improvement over the SLS?
   (1 = Much Worse, 3 = No change, 5 =Big improvement)

   1 2 3 4 5

9. Which Convective Watch products do you use (circle all that apply):

WCN	SEL	SAW	WWA
SWODY1	SWODY2	SWOMCD	
HWG	MAM		

10. Does the format of Convective Watch products meet your needs?
    (1 = Does not meet needs at all, 5 = Meets needs completely)

    1 2 3 4 5

    List those that meet your need: _____

    _____

    List those that do not meet your need: _____

    _____

11. Please make any comments you feel are important concerning the Convective Watch Decentralization process (use additional sheets if necessary).

Attachment 5 - SPC Questionnaire

Date: _____

For questions 1 through 5, circle the response number (or response) that best fits your assessment.

1. How reliable is the software that is used to define the SEL?
   (1 = Very Unreliable to 5 = Very Reliable)

   1 2 3 4 5

2. How do the functions of the county redefine program on NAWIPS compare with those available on VDUC?
   (1 = does not simulate functions of VDUC adequately, 3 = "has all functions of VDUC, 5 = Has more and is much better than VDUC)

   1 2 3 4 5

3. How well does the automatic watch outline generated for the WOU reasonably describe counties still active in the watch?
   (1 = describes poorly to 5 = describes very well)

   1 2 3 4 5

4. How much additional time, if any, has been required to coordinate and disseminate the watch using the county watch program instead of the old parallelogram method?

No added time	5-10 min.	15-20 min.	25-30 min.	More than 30 min.

5. How much increase in work load(phone calls from NWSFO/NWSOs) is there with the implementation of the WCN clearing product.
   (1 = no increase to 5 = large increase).

   1 2 3 4 5

6. Please make any comments (below) you feel are important concerning the Convective Watch Decentralization process (use additional sheets if necessary).

Attachment 6 - List of Acronyms

AWC	Aviation Weather Center
AWIPS	Advanced Weather Interactive Processing System
CWA	County Warning Area
CWD	Convective Watch Decentralization
CWSU	Center Weather Service Unit
FAA	Federal Aviation Administration
HPC	Heavy Precipitation Center
HWG	Hazardous Weather Guidance
L1	Offices selected for in-depth evaluation
L2	Offices not involved in in-depth evaluation
MAM	Mesoscale Alerting Message
MSD	Meteorological Services Division
MWP	Meteorological Weather Processor
N-AWIPS	National Center AWIPS
NCEP	National Centers for Environmental Prediction
NWS	National Weather Service
NWSEO	National Weather Service Employees Organization
NWSFO	NEXRAD Weather Service Forecast Office
NWSO	NEXRAD Weather Service Office
OM	Office of Meteorology
QTP	Quality Through Partnership
SAW	Preliminary Notification of a Watch
SEL	Severe Local Storm Public Watch Narrative
SLS	NWSFO/NWSO Convective Watch County Listing
SPC	Storm Prediction Center
SVS	Severe Weather Statement
SWODY1	Day 1 Convective Outlook
SWODY2	Day 2 Convective Outlook
SWOMCD	Mesoscale Convective Discussion
TPC	Tropical Prediction Center
VDUC	interactive computer system
WCN	Watch Clearance Notification
WFO	Weather Forecast Office
WOU	Watch Outline Update
WSH	Weather Service Headquarters
WWA	Watch Status Report